ABSTRACT

The present invention is an efficient protocol designed primarily for use in real-time communications systems involving the transmission of large numbers of short messages, allowing the user interface to have immediate and complete control over a device. The protocol utilizes a unique cascading token passing system for granting the right to control access to the transmission media. Sequential devices on a queue pass the token to each other in sequence, and a master device restarts the sequence each time the end of the sequence is reached. The master is also capable of giving priority to selected devices in the queue. The master device keeps track of skips in the queue (from failed or non-present devices) as well as the location of the end of the queue, and also periodically checks for new devices in the queue, checks the status of "dead" devices in the queue, and checks for devices added to the end of the queue. The master is capable of maintaining and reporting all such status information.

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